

LBNL ENVIRONMENTAL MANAGEMENT PROGRAM (EMP)

<b>EMP Coordinator(s) and Organization(s):</b> Blair Horst, Facilities		<b>Revision Date:</b> 8/28/2008	<b>EMP No.:</b> 07-02B																																																																				
<b>Aspect:</b> Water use	<b>Objective:</b> Implement sustainable practices for to reduce water consumption intensity.	<b>Target:</b> Reduce water consumption intensity by 2% annually to achieve 16% by the end of fiscal year (FY) 2015 relative to baseline water consumption intensity of FY 2007.																																																																					
<b>Category:</b> <input checked="" type="checkbox"/> Improve <input type="checkbox"/> Control <input type="checkbox"/> Study (short term)																																																																							
<b>Strategy:</b> Determine and report water use intensity each fiscal year, and thereafter, through FY 2015. Conduct water audits in at least 10% of facilities each year. Prepare and submit a Draft Executable Plan to the BSO for LBNL to achieve a 16% water use intensity savings by the end of FY 2015, based on FY 2007 consumption. Starting during FY 2008, implement water efficiency retrofit projects. Install water metering devices where practicable.																																																																							
<b>Actions to Achieve Objective:</b> <table border="1" style="width:100%; border-collapse: collapse; margin-top: 5px;"> <thead> <tr> <th style="text-align: center;">Action</th> <th style="text-align: center;">Lead</th> <th style="text-align: center;">Due Date</th> <th style="text-align: center;">Completion Date</th> </tr> </thead> <tbody> <tr><td>1. Install water metering devices at Building 86.</td><td>Blair Horst</td><td>9/30/07</td><td>9/30/07</td></tr> <tr><td>2. Conduct FY07 water audit using Energy Service Contractor (ESCO).</td><td>Blair Horst</td><td>9/30/07</td><td>Deferred; see #4</td></tr> <tr><td>3. Determine and report FY07 water use.</td><td>Blair Horst</td><td>12/10/07</td><td>12/05/07</td></tr> <tr><td>4. East Bay Municipal Utilities District (EBMUD) Savings: Reduce irrigation schedules</td><td>M. Dong</td><td>8/1/2008</td><td>5/22/2008</td></tr> <tr><td>5. EBMUD Savings: B70A wastewater reuse for cooling tower (CT) makeup with available funds (Project ID: H70AWW - Bldg. 70A Waste Water [OHSS]).</td><td>M. Dong</td><td>9/30/08</td><td></td></tr> <tr><td>6. DOE O 430.2B Draft Executable Plan: water savings goals &amp; performance plan</td><td>Blair Horst</td><td>9/30/08</td><td></td></tr> <tr><td>7. DOE O 430.2B Final Executable Plan: water savings goals &amp; performance plan</td><td>Blair Horst</td><td>12/31/08</td><td></td></tr> <tr><td>8. Determine and report FY08 water use and usage intensity.</td><td>Blair Horst</td><td>12/31/08</td><td></td></tr> <tr><td>9. Conduct FY08 water audits via Energy Savings Performance Contract (ESPC) Detailed Energy Survey (DES) per current scheduled Delivery Order contract execution.</td><td>B Horst</td><td>2/24/09</td><td></td></tr> <tr><td>10. Begin construction of FY08 water management projects identified in ESPC DES.</td><td>Blair Horst</td><td>2/24/09</td><td></td></tr> <tr><td>11. EBMUD Savings: B77A wastewater reuse for LCW makeup with available funds.</td><td>M. Dong</td><td>9/30/09</td><td></td></tr> <tr><td>12. EBMUD Savings: Change B34 CT filter backwash (BW) from City Water (CW) to CT Basin water with available funds.</td><td>M. Dong</td><td>9/30/09</td><td></td></tr> <tr><td>13. DOE O 430.2B Draft update Executable Plan: water savings &amp; performance plan</td><td>Blair Horst</td><td>9/30/09</td><td></td></tr> <tr><td>14. DOE O 430.2B Final update Executable Plan: water savings &amp; performance plan</td><td>Blair Horst</td><td>9/30/09</td><td></td></tr> <tr><td>15. Determine and report FY09 water use and usage intensity.</td><td>Blair Horst</td><td>12/31/09</td><td></td></tr> <tr><td>16. Conduct annual water audits, report and update Executable Plan as appropriate.</td><td>Blair Horst</td><td>12/31 yearly</td><td></td></tr> </tbody> </table>				Action	Lead	Due Date	Completion Date	1. Install water metering devices at Building 86.	Blair Horst	9/30/07	9/30/07	2. Conduct FY07 water audit using Energy Service Contractor (ESCO).	Blair Horst	9/30/07	Deferred; see #4	3. Determine and report FY07 water use.	Blair Horst	12/10/07	12/05/07	4. East Bay Municipal Utilities District (EBMUD) Savings: Reduce irrigation schedules	M. Dong	8/1/2008	5/22/2008	5. EBMUD Savings: B70A wastewater reuse for cooling tower (CT) makeup with available funds (Project ID: H70AWW - Bldg. 70A Waste Water [OHSS]).	M. Dong	9/30/08		6. DOE O 430.2B Draft Executable Plan: water savings goals & performance plan	Blair Horst	9/30/08		7. DOE O 430.2B Final Executable Plan: water savings goals & performance plan	Blair Horst	12/31/08		8. Determine and report FY08 water use and usage intensity.	Blair Horst	12/31/08		9. Conduct FY08 water audits via Energy Savings Performance Contract (ESPC) Detailed Energy Survey (DES) per current scheduled Delivery Order contract execution.	B Horst	2/24/09		10. Begin construction of FY08 water management projects identified in ESPC DES.	Blair Horst	2/24/09		11. EBMUD Savings: B77A wastewater reuse for LCW makeup with available funds.	M. Dong	9/30/09		12. EBMUD Savings: Change B34 CT filter backwash (BW) from City Water (CW) to CT Basin water with available funds.	M. Dong	9/30/09		13. DOE O 430.2B Draft update Executable Plan: water savings & performance plan	Blair Horst	9/30/09		14. DOE O 430.2B Final update Executable Plan: water savings & performance plan	Blair Horst	9/30/09		15. Determine and report FY09 water use and usage intensity.	Blair Horst	12/31/09		16. Conduct annual water audits, report and update Executable Plan as appropriate.	Blair Horst	12/31 yearly	
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<b>Metrics (Environmental Performance Indicators):</b> 1. Water consumption in cubic feet                      3. Water consumption intensity in cubic feet of use per square foot of building area 2. Building area in square feet																																																																							
<b>EMP Closure Summary:</b>																																																																							

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## NOTES / INSTRUCTIONS

EMP Coordinator(s)	Name the person(s) responsible for the accomplishment of the EMP; i.e. overseeing the workplan, monitoring and reporting on progress, requesting changes to the workplan as appropriate.
Organization(s)	Name the organization(s) primarily impacted or affected by this EMP. If only one department of an organization is affected, note that department.
Revision Date	Date that identifies when EMPs are modified or updated.
EMP Number	Number will be assigned by the EMS Manager.
Aspect	The significant aspect (e.g. energy use, chemical usage, etc.).
Objective	Focusing on the impacts related to this significant aspect, state the goal. What is it you want to achieve? Use action words – reduce, improve, control, etc.
Target	State “how much and by when.” The target is the performance element and should be quantitative and measurable.
Category	The categories identify and help to focus the EMP. The definitions of these categories are: <ul style="list-style-type: none"> <li>• Improve – improve the performance in this area</li> <li>• Control – current environmental controls are sufficient, but EMP objective is to maintain and strengthen the level of control</li> <li>• Study – the issue or area has been designated as significant, but historic or baseline data must be studied and compiled to determine the direction of future action</li> </ul>
Strategy	In this section, describe the overall approach to the problem. Some of the questions to be addressed include: <ul style="list-style-type: none"> <li>• How much has or has not been already been accomplished in this area?</li> <li>• Why is this important? Are there relevant drivers (regulations, directives, public pressure, etc.)?</li> <li>• What are the impacts to be addressed in this EMP?</li> </ul>
Actions	List the specific actions to be taken to achieve the objective and target. List the action and identify the responsible parties and dates by which the actions should be accomplished.
Metrics	Metrics are the Environmental Performance Indicators, how you measure the accomplishments. List the specific, quantifiable measurements or metrics (percent of employees trained, kilowatt hours saved, tons of waste diverted, gallons of material, etc.).
EMP Closure Summary	After the EMP and all actions within the EMP are complete, a concise description of the EMP's ability to achieve its objective and target should be provided.